

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Tsunco Yamada

Application No.: 10/540,305

Confirmation No.: 3475

Filed: June 20, 2005

Art Unit: 3677

For: ELECTRONIC INSTRUMENT

Examiner: M. T. Vogelbacker

AMENDMENT

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action mailed March 23, 2006, please amend the above-identified U.S. patent application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 8 of this paper.

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph on page 10, starting at line 2, as follows:

More specifically, this excessive rotation preventing mechanism 7 is constructed so that an annular rotary member 8 that is rotatable in any direction of the right and left directions thereto is fitted and coupled with the shaft portion 5 provided in the first coupling member 3, a first abutment retainer mechanism 9 is provided for coming into abutment with and retained at this rotary member 8 and the first coupling member 3 even if the first coupling member 3 is rotated in any direction of the right and left directions so that the rotary member 8 is rotated together, and even if this first coupling member 3 and the rotary member 8 are rotated in any direction of the right and left directions together, a second abutment-and retainer mechanism 10 for preventing this cooperative rotation is provided to the rotary member 8 and the second coupling member 4.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) An electronic instrument composed by pivoting a first member provided with a display portion to a second member, provided with an operating portion and connected electrically to the first member ~~through wirings or the like,~~ through a hinge device to be rotatable substantially in the horizontal direction, said hinge device characterized in that a first coupling member having a shaft portion is provided in one of said first member and said second member, a second coupling member having a bearing hole portion for bearing said shaft portion is provided in the other member, said first coupling member and said second coupling member are coupled with each other through the shaft portion to be rotatable relative to each other so that the first member ~~may be~~ is rotated through the shaft portion relative to the second member in any direction of right and left directions, and an excessive rotation preventing mechanism for preventing relative excessive rotation of the first member in any direction of the right and left directions relative to the second member is provided, ~~the excessive rotation preventing mechanism fits around~~ an annular rotary member is provided to be rotatable in any direction of the right and left directions relative to said shaft portion, a first abutment retainer mechanism is provided in which ~~as a first~~ a first abutment portion with which a projection provided on said rotary member is brought into abutment is formed to project from a circumferential surface of the shaft portion and in which the first abutment portion is abutted against and retained at the projection even if the first coupling member or the second coupling member is rotated in any direction of the right and left directions so that said rotary member is cooperatively rotated in the right and left directions together with the shaft portion, a second abutment retainer mechanism is provided, in which a projecting portion is formed to project from a surface of the second coupling member in which said projection is abutted and retained and said first abutment portion ~~is not abutted but~~ allows the upward passage when said shaft portion and said rotary member are

rotated together in any direction of the right and left directions, and said projection abuts against and retained at the projecting portion to thereby prevent the cooperative rotation, ~~is provided in~~ said rotary member and said second coupling member, and said ~~excessive~~ excessive rotation preventing mechanism ~~is adapted to prevent prevents~~ the horizontal rotation of the first member in a position where the first member is directed to a rear back side from a position where the first member is directed to a rear frontal side even if the first member is rotated in any direction of the right and left directions in the horizontal direction to said second member.

2. (Currently Amended) The electronic instrument according to claim 1, wherein said ~~excessive rotation preventing mechanism fits around an annular rotary member that is rotatable relative to said shaft portion in any direction of the right and left directions; An~~ electronic instrument composed by pivoting a first member provided with a display portion to a second member, provided with an operating portion and connected electrically to the first member, through a hinge device to be rotatable substantially in the horizontal direction, said hinge device characterized in that a first coupling member having a shaft portion is provided in one of said first member and said second member, a second coupling member having a bearing hole portion for bearing said shaft portion is provided in the other member, said first coupling member and said second coupling member are coupled with each other through the shaft portion to be rotatable relative to each other so that the first member is rotated through the shaft portion relative to the second member in any direction of right and left directions, and an excessive rotation preventing mechanism for preventing relative excessive rotation of the first member in any direction of the right and left directions relative to the second member is provided, an annular rotary member is provided to be rotatable in any direction of the right and left directions relative to said shaft portion, a first abutment retainer mechanism is provided in which a first abutment portion with which a projection provided on said rotary member is brought into abutment is formed to project from a circumferential surface of the shaft portion and in which the first abutment portion is abutted against and retained at the projection even if the first coupling member or the second coupling member is rotated in any direction of the right and left directions so that said rotary member is cooperatively rotated in the right and left directions together with the shaft portion, a second abutment retainer mechanism is provided, in which a projecting

portion is formed to project from a surface of the second coupling member in which said projection is abutted and retained and said first abutment portion allows the upward passage when said shaft portion and said rotary member are rotated together in any direction of the right and left directions, and said projection abuts against and retained at the projecting portion to thereby prevent the cooperative rotation in said rotary member and said second coupling member, and said excessive rotation preventing mechanism prevents the horizontal rotation of the first member in a position where the first member is directed to a rear back side from a position where the first member is directed to a rear frontal side even if the first member is rotated in any direction of the right and left directions in the horizontal direction to said second member, wherein a first abutment portion for being abutted against and retained at the respective right and left side portions of a projection provided in said rotary member when said first coupling member or said second coupling member is rotated in the respective right and left directions is provided to project from a circumferential surface of said shaft portion and said first abutment portion is abutted against and retained at the right and left side portions of the projection, so that said shaft portion and said rotary member may be is rotated in any direction of the right and left directions together to form said first abutment retainer mechanism, a second abutment retainer mechanism is provided for preventing the cooperative rotation between the rotary member and the shaft portion by said first abutment retainer mechanism, said second abutment retainer mechanism has a second abutment portion formed to project from a surface of said second coupling member for allowing an upward passage without abutting against the first abutment portion while being retained at one side portion of right and left side portion of the projection provided on said rotary member when said shaft portion and said rotary member are rotated together in any one direction of said right and left directions, and a third abutment portion is formed to project from a surface of said second coupling member for allowing upward passage without the first abutment portion abutting against and for being abutted against by and retained at a side portion of the opposite side to the side portion for being abutted against by the second abutment portion out of the right and left side portions of the projection provided on said rotary member when the shaft portion and said rotary member are rotated in any direction together in the right and left direction.

3. (Previously presented) The electronic instrument according to claim 2, wherein a position where the first abutment portion provided in said shaft portion is rotation-stopped by said first abutment retainer mechanism and said second abutment retainer mechanism when said first coupling member or said second coupling member is rotated in the left direction and a position where the first abutment portion provided in said shaft portion is rotation-stopped by said first abutment retainer mechanism and said second abutment retainer mechanism when said first coupling member or said second coupling member is rotated in the right direction are identified with each other.

4. (Currently Amended) An electronic instrument composed by pivoting a first member provided with a display portion to a second member, provided with an operating portion and connected electrically to the first member ~~through wirings or the like~~, through a hinge device to be rotatable substantially in the horizontal direction, said hinge device characterized in that a first coupling member having a shaft portion is provided in one of said first member and said second member, a second coupling member having a bearing hole portion for bearing said shaft portion is provided in the other member, said first coupling member and said second coupling member are coupled with each other through the shaft portion to be rotatable relative to each other so that the first member ~~may be~~ is rotated through the shaft portion relative to the second member in any direction of right and left directions, and an excessive rotation preventing mechanism for preventing relative excessive rotation of the first member in any direction of the right and left directions relative to the second member is provided, ~~said excessive rotation preventing mechanism fits around an annular rotary member that is~~ provided to be rotatable relative to said shaft portion in any direction of the right and left directions, a first abutment portion for being abutted against and retained at the respective right and left side portions of a projection provided in said rotary member when said first coupling member or said second coupling member is rotated in the respective right and left directions is provided to project from a circumferential surface of said shaft portion and said first abutment portion is abutted against and retained at the right and left side portions of the projection, so that said shaft portion and said rotary member ~~may be~~ are rotated in any direction of the right and left directions together to form ~~said a~~ first abutment retainer mechanism, a second abutment retainer mechanism is

provided for preventing the cooperative rotation between the rotary member and the shaft portion ~~by said first abutment retainer mechanism~~, said second abutment retainer mechanism has a second abutment portion formed to project from a surface of said second coupling member for allowing an upward passage without abutting against the first abutment portion while being retained at one side portion of right and left side portion of the projection provided on said rotary member when said shaft portion and said rotary member are rotated together in any one direction of said right and left directions, and a third abutment portion is formed to project from a surface of said second coupling member for allowing upward passage without the first abutment portion abutting against and for being abutted against ~~by~~ and retained at a side portion of the opposite side to the side portion for being abutted against ~~by~~ the second abutment portion out of the right and left side portions of the projection provided on said rotary member when the shaft portion and said rotary member are rotated in any direction together in the right and left direction, wherein a position where the first abutment portion provided in said shaft portion is rotation-stopped by said first abutment retainer mechanism and said second abutment retainer mechanism when said first coupling member or said second coupling member is rotated in the left direction and a position where the first abutment portion provided in said shaft portion is rotation-stopped by said first abutment retainer mechanism and said second abutment retainer mechanism when said first coupling member or said second coupling member is rotated in the right direction are identified with each other, and said excessive rotation preventing mechanism ~~is adapted to prevent~~ ~~prevents~~ the horizontal rotation of the first member in a position where the first member is directed to a real back side from a position where the first member is directed to a real frontal side even if the first member is rotated in any direction of the right and left directions to said second member.

REMARKS

Claims 1-4 are pending in the application. Claims 1, 2 and 4 have been amended by way of the present amendment. Reconsideration is respectfully requested.

In the outstanding Office Action, the information disclosure was indicated as failing to comply with 37 CFR 1.98(a)(2); the specification was objected to due to informalities; claim 2 and claim 3 were objected to due to informalities; claims 1-4 were rejected under 35 U.S.C. Section 112, 2nd paragraph; claim 1 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 5,913,351 (Miura) in view of U.S. Patent No. 6,618,903 (Kim); and claim 2 and claim 3 were objected to as being dependent upon a rejected base claim but were indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome the rejections under 35 U.S.C. Section 112, 2nd paragraph; and claim 4 was indicated as allowable if rewritten to overcome the rejections under 35 U.S.C. Section 112, 2nd paragraph.

Allowable Subject Matter

First, Applicant wishes to thank Examiner Vogelbaker for the early indication of allowable subject matter in claims 2, 3 and 4. To that end, claim 2 has been rewritten in independent form and to overcome the rejections under 35 U.S.C. Section 112, 2nd paragraph. In addition, claim 4 has been rewritten to overcome the rejections under 35 U.S.C. Section 112, 2nd paragraph. Therefore, it is respectfully submitted that claims 2-4 are in condition for allowance.

Information Disclosure Objection

The information disclosure was indicated as failing to comply with 37 CFR 1.98(a)(2). In response, an Information Disclosure Statement is filed with the present amendment that includes legible copies of the foreign documents listed that are in the Applicant's possession.

Specification Objection

The specification was objected to due to informalities. The specification was amended to clarify the invention. In particular, as suggested in the outstanding Office Action, the specification was amended to correct the typographical error of including the word “and” that preceded the phrase “second abutment” on page 10, line 10 of the specification. The amendment raises no question of new matter. Therefore, it is respectfully requested that the outstanding specification objection be withdrawn.

Claim Objections

Claim 2 and claim 3 were objected to due to informalities. Claim 2 was amended to clarify the invention and claim 3 is dependent upon claim 2. In particular, as suggested in the outstanding Office Action, claim 2 was amended to correct the spelling error in the word “rotary.” The amendment raises no question of new matter. Therefore, it is respectfully requested that the outstanding claim objections be withdrawn.

35 U.S.C. Section 112 Rejections

Claims 1-4 were rejected under 35 U.S.C. Section 112, 2nd paragraph. Claims 1, 2 and 4 have been amended to clarify the invention. In general, claims 1, 2 and 4 have been amended in accordance with the suggestions and to address the questions of the outstanding Office Action. Support for the amendments is at least found in the original claims and at least shown in FIG. 1, FIG. 2, and FIG. 7 – FIG. 9. It is respectfully submitted that the amendments raise no questions of new matter. Therefore, it is respectfully requested that the outstanding claim rejections be withdrawn.

35 U.S.C. Section 103 Rejections

Claim 1 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over Miura in view of Kim.

Miura discloses a tilt hinge designed small in size and capable of gaining a great torque, comprising a bracket to be mounted on an apparatus body side, a rotating shaft so constituted as to be mounted on an opening-closing body which is rotatably mounted on a bearing section of the bracket.¹ In particular, Miura discloses a tilt hinge best suited for supporting, at an intermediate angle of opening with respect to an apparatus body, a display body (an opening-closing body) of an office automation equipment such as a small-type word processor, notebook type personal computer, etc., and a small-type liquid crystal television set.²

However, Miura nowhere discloses, as claim 1 and claim 4 recite an:

excessive rotation preventing mechanism prevents the horizontal rotation of the first member in a position where the first member is directed to a rear back side from a position where the first member is directed to a rear frontal side even if the first member is rotated in any direction of the right and left directions to said second member.

Therefore, it is respectfully submitted that Miura does not disclose, suggest or make obvious the claimed invention and that claims 1 and claim 4, and claims dependent thereon, patentably distinguish thereover.

The outstanding Office Action acknowledges other deficiencies of Miura and attempts to overcome these deficiencies by combining Miura with Kim.³ However, Kim cannot cure all the deficiencies of Miura as will be discussed below.

Kim discloses a hinge device of a foldable electronic appliance having a sub-body rotatably mounted by the hinge device to a main body.⁴ In particular, Kim discloses a hinge device that allows the sub-body to be opened and shut smoothly and allows a user to feel certain

¹ Miura at ABSTRACT.

² *Id.* at column 1, line 6-11.

³ See outstanding Office Action at page 5, paragraph 7, lines 10-11.

vibrations when the sub-body is opened and shut, thereby ensuring the reliability of a product to the user.⁵ Further, Kim discloses a movable disk **60** that rotates in cooperation with the other end **23** of hinge shaft **20** until projection **66** engages stopper protrusion **46**.⁶

However, Kim nowhere discloses, as claim 1 and claim 4 recite an:

excessive rotation preventing mechanism prevents the horizontal rotation of the first member in a position where the first member is directed to a rear back side from a position where the first member is directed to a rear frontal side even if the first member is rotated in any direction of the right and left directions to said second member.

Thus, Kim cannot overcome all of the deficiencies of Miura. Therefore, it is respectfully submitted that neither Miura nor Kim, whether taken alone or in combination, do not disclose, suggest or make obvious the claimed invention and that claims 1 and claim 4, and claims dependent thereon, patentably distinguish thereover.

Conclusion

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 21604-00023-US1 from which the undersigned is authorized to draw.

Dated: June 21, 2005
471822_1

Respectfully submitted,

By _____
Myron Keith Wyche
Registration No.: 47,341
CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800
Washington, DC 20036-3425

⁴ Kim at ABSTRACT.

⁵ *Id.* at column 1, lines 17-20.

⁶ *Id.* at column 5, lines 7-10.

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(202) 331-7111
(202) 293-6229 (Fax)
Attorney for Applicant